Interpectoral Venous Angioma Presenting as a Breast Mass

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Chest wall disorders, especially in a submammary location, occasionally mimic breast tumors. We report a case of a venous angioma between the pectoralis major and minor muscles. It presented as a palpable mass in the left breast. The mass mimicked a breast tumor both clinically and on mammography.

Case Report

A 44-year-old woman had a palpable breast mass for 2 months. The patient was referred to our hospital for further evaluation of this mass, which contained calcifications on mammography. She had no history of breast disease and no risk factor for breast cancer. Physical examination revealed a nontender 3 × 4-cm mass in the upper outer area of the left breast. Laboratory data and chest radiographic findings were normal.

Magnification mammography showed a 4.3 × 2.2-cm mass and high density with internal dense calcifications in the left axilla and upper outer area of breast. The mass was round and well circumscribed with a macrolobulated margin (Figure 1). A subsequent sonographic examination revealed a 3.9 × 0.95-cm hypoechoic mass with internal multiloculated low echoic portion on the same area. On sonography, the mass was located in the deep portion of breast, and some portions of the mass were located behind the pectoralis muscle (Figure 2). Axial contrast-enhanced computed tomography showed a 5.2 × 8-cm well defined tubular soft tissue mass with internal calcifications and some enhanced portions of the mass on the left anterior chest wall between the pectoralis major and minor muscles (Figure 3).

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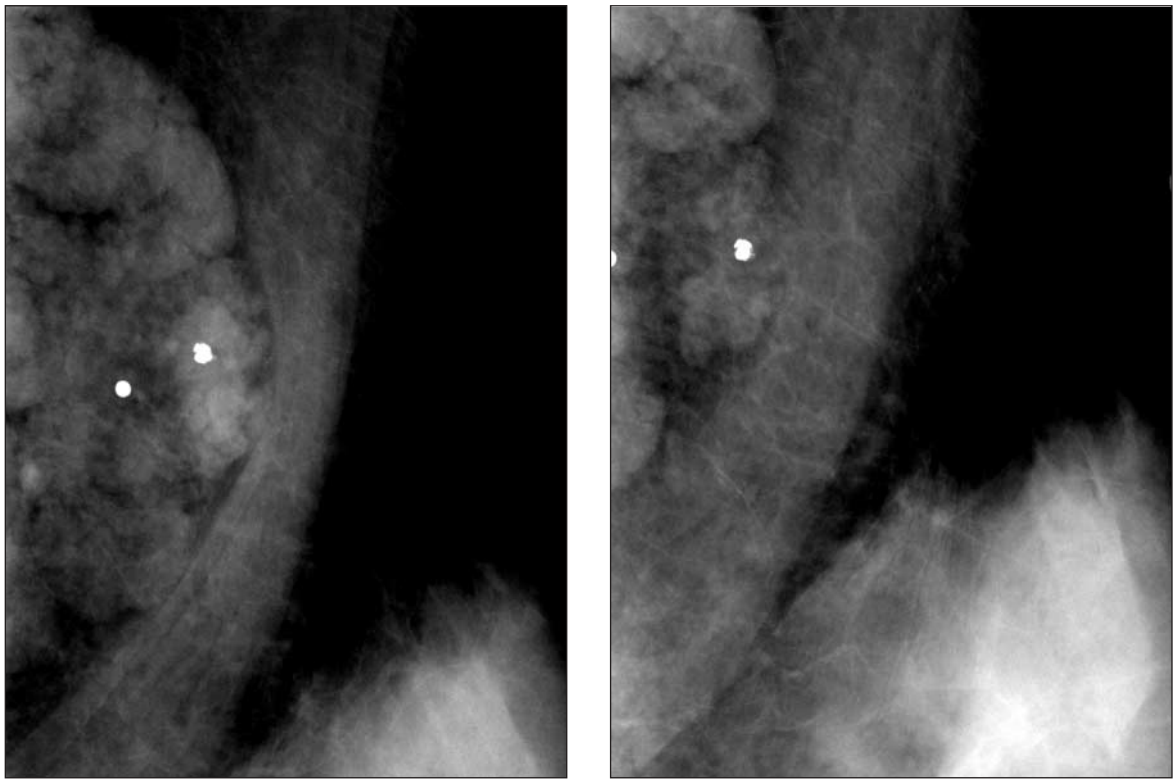

A B

Figure 1. Mediolateral (**A**) and craniocaudal (**B**) magnification mammograms show a 4.3 × 2.2-cm mass and high density with internal dense calcifications in the left axilla and upper outer area of breast.

Figure 2. Transverse (**A**) and longitudinal (**B**) sonograms show a 3.9 × 0.95-cm hypoechoic mass with an internal multiloculated hypoechoic portion in the same area.

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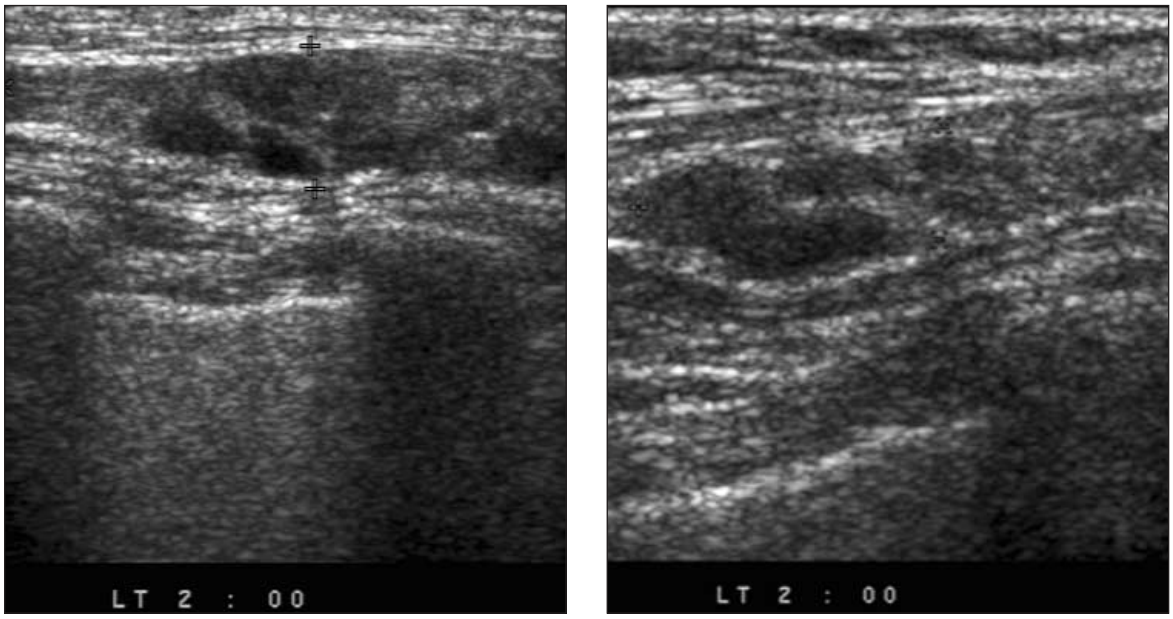


An excisional biopsy was performed, and a 4-cm multiloculated mass was found between the pectoralis major and minor muscles. The pathologic diagnosis was a venous angioma. On a low-power view, the tumor was composed of irregularly shaped small and large vascular structures and fatty tissue (Figure 4A). The wavy vascular structures were lined by endothelial cells and small tangled smooth muscle structures (Figure 4, B and C). The endothelial cells were positive for CD31 (a marker for both lymphatic and vascular endothelial cells) and negative for podoplanin (a marker for lymphatic endothelial cells) (Figure 4, D and E).

Discussion

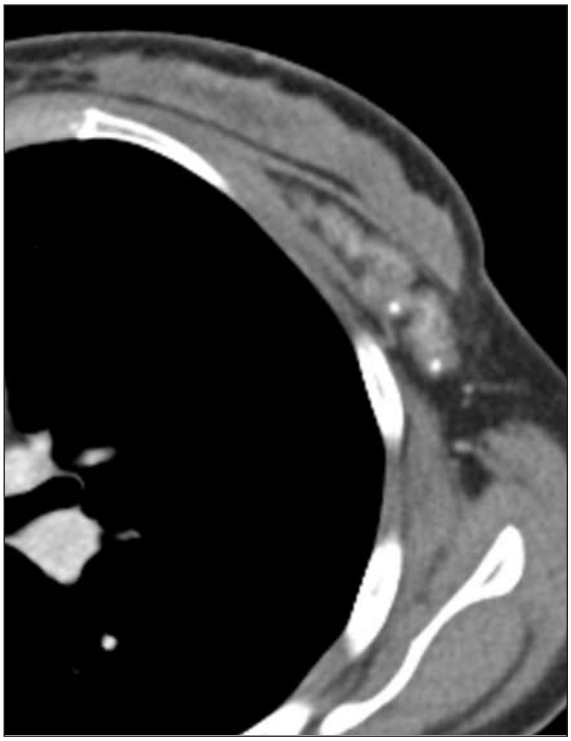
Soft tissue hemangiomas are common benign neoplasms and represent up to 7% of all benign soft tissue tumors.[1] These lesions more commonly affect women and are usually found in the first 3 decades of life. They are subdivided into 5 categories; capillary, cavernous, arteriovenous, venous, and mixed variations. A venous hemangioma usually involves deep structures and is found in the retroperitoneum, mesentery, and extremities.[2]

A soft tissue hemangioma is visualized as a nonspecific soft tissue mass on radiography, but phleboliths represent characteristic calcifications.[1,2] Computed tomography shows a poorly defined mass with attenuation similar to that of muscle. If the mass contains phleboliths, calcifications are well visualized, as on radiography.[2] Sonography usually depicts a complex mass. If phleboliths are abundant, acoustic shadowing is visualized on sonography.[1,2] Magnetic resonance imaging, the reference standard for imaging evaluation of soft tissue masses, shows the extent of soft tissue hemangiomas. They characteristically show intermediate signal intensity on T1-weighted images and marked hyperintensity on T2-weighted images, indicating a prolonged T2 relaxation time.[2,3]

In this case, the mass, attached to the chest wall, was suggestive of a breast tumor clinically and on mammography. Some reports have described masses involving the chest wall that mimicked breast tumors, such as hemangiomas of pectoralis muscle,[4,5] intramuscular lipomas,[6] and pectoral muscle tuberculosis.[7] Although hemangiomas are the most common soft tissue neoplasms, they are uncommon on the chest wall, and other chest wall disorders should be considered in the differential diagnosis, such as neurilemomas, fibromas, lipomas, and fibrolipomas.[8]

In conclusion, soft tissue hemangiomas on the chest wall are uncommon tumors that may mimic breast tumors clinically and on mammography. The presence of calcifications and a submammary location are important because they allow the correct diagnosis to be made. Especially, sonography is an inexpensive and easy method for the differential diagnosis of such lesions.

Figure 3. Axial contrast-enhanced computed tomogram shows a 5.2 × 8-cm tubular soft tissue mass with internal calcifications and some enhanced portions of the mass on the left anterior chest wall, between the pectoralis major and minor muscles.



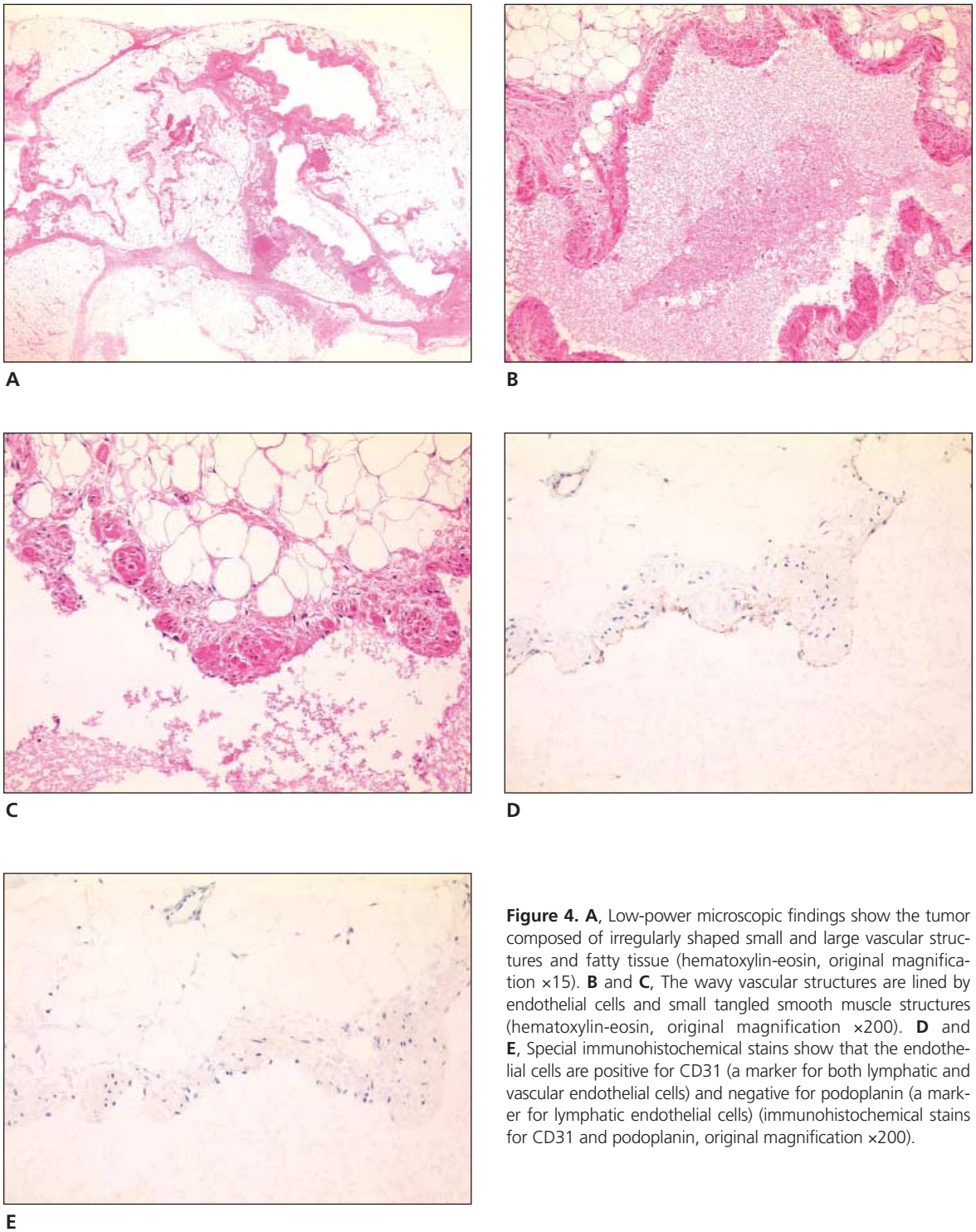


Figure 4. A, Low-power microscopic findings show the tumor composed of irregularly shaped small and large vascular structures and fatty tissue (hematoxylin-eosin, original magnification ×15). **B** and **C**, The wavy vascular structures are lined by endothelial cells and small tangled smooth muscle structures (hematoxylin-eosin, original magnification ×200). **D** and **E**, Special immunohistochemical stains show that the endothelial cells are positive for CD31 (a marker for both lymphatic and vascular endothelial cells) and negative for podoplanin (a marker for lymphatic endothelial cells) (immunohistochemical stains for CD31 and podoplanin, original magnification ×200).

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